Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

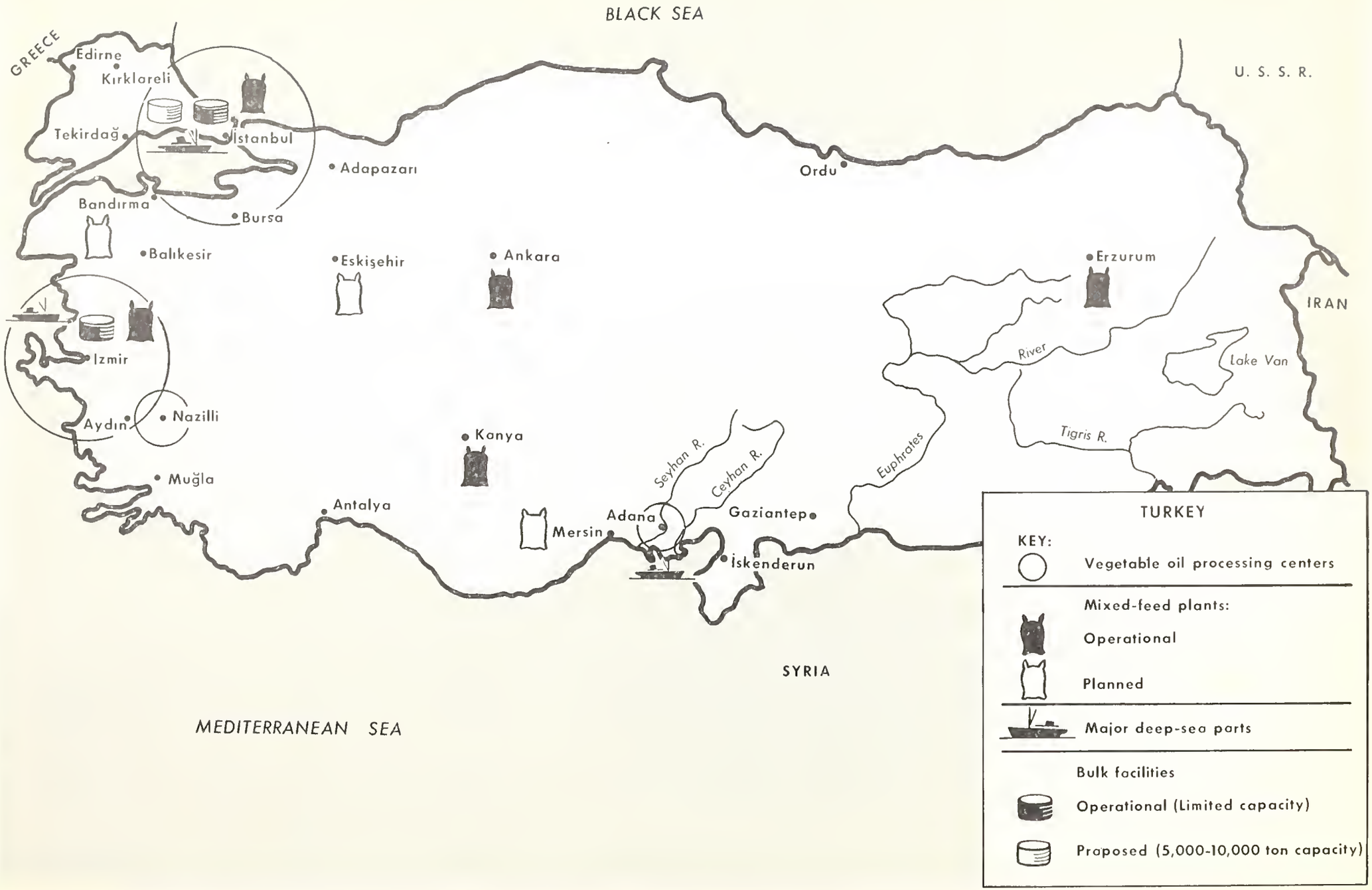
281.9
F76Fm

U.S. DEPT. OF AGRICULTURE
LIBRARY
APR 17 1962
CURRENT SERIAL RECORDS

# The MARKET for FATS, OILS, and OILMEAL in TURKEY

FAS-M-129
March 1962

U.S. DEPARTMENT OF AGRICULTURE
Foreign Agricultural Service


BLACK SEA
GREECE
Edirne
Kirklareli
Tekirdağ
İstanbul
Adapazarı
Ordu
U. S. S. R.
Bandırma
Bursa
Balıkesir
Eskişehir
Ankara
Erzurum
IRAN
River
Lake Van
Izmir
Aydın
Nazilli
Tigris R.
Konya
Seyhan R.
Ceyhan R.
Euphrates
Muğla
Antalya
Mersin
Adana
Gaziantep
İskenderun
SYRIA
MEDITERRANEAN SEA
TURKEY
KEY:
Vegetable oil processing centers
Mixed-feed plants:
Operational
Planned
Major deep-sea ports
Bulk facilities
Operational (Limited capacity)
Proposed (5,000-10,000 ton capacity)

## FOREWORD

Through impressive strides in both business and agriculture, many nations of the world moved from "aid" to "trade" status during the late 1950's. As their economies improved, U.S. assistance programs disappeared, and these countries have now become good-to-excellent dollar markets for U.S. agricultural commodities, both raw and processed.

Soybeans and soybean products shared in this prosperity and are a prominent part of it. The Soybean Council of America, Inc., has been working hard on a worldwide basis to increase the use of the oil and protein fractions of the processed soybean as well as the raw bean itself. This organization does not seek to displace any oilseed or oil source normal to the countries where it is promoting soybeans and their products; rather, it seeks increased consumption of all fats, oils, and proteins. Its campaign has materially stepped up exports of U.S. soybeans and soybean products, not only to accustomed markets but to entirely new ones.

In late 1960, the Foreign Agricultural Service began to review markets in countries that appear to offer opportunities for new or expanded trade in oilseeds and oilseed products. The fifth of these reviews is presented here. Earlier publications have discussed marketing conditions and factors in Egypt and Syria, Pakistan, Iran, Southeast Asia, and Japan.

The primary intent of this series is to provide the U.S. oilseed and oilseed-products industry with information on which it can make intelligent decisions as to the possible degree of its participation or activity in a given market.

In the present review, basic market data were obtained by personal contacts with key sources in Ankara, İstanbul, Gaziantep, Nizip, İskenderum, Adana, Konya, İzmir, Mersin, Ayvalık, and Tarsus.

Walter W. Sikes

Walter W. Sikes, Director
Fats and Oils Division

## ACKNOWLEDGMENT

The authors are particularly grateful for the assistance provided by Mr. Vasfi Hakman, Director for Turkey, Soybean Council of America; the staff members of the Office of the U. S. Agricultural Attaché; the Political, Commercial, and Economic Sections of the U. S. Embassy; the Consulates General; the Agency for International Development in Ankara.

CONTENTS


| | Page |
|---|---|
| Summary | 1 |
| General characteristics | 1 |
| Sources of supply: | |
| Oilseeds | 2 |
| Vegetable oils and animal fats | 4 |
| Oilcake and meal | 7 |
| The vegetable oil industry: | |
| Structure and capacity | 8 |
| Seed processing | 8 |
| Vegetable oil refining | 10 |
| Olive processing | 12 |
| The soap industry: | |
| Structure and capacity | 13 |
| Marketing trends and prospects | 15 |
| The mixed-feed industry: | |
| Structure and capacity | 16 |
| Marketing trends and prospects | 16 |
| Marketing factors: | |
| Prices and price patterns | 19 |
| Transportation and handling | 22 |
| Role of the Turkish Government: | |
| Recent financial trends | 23 |
| Foreign capital investment | 23 |
| Import procedures | 23 |
| Tariff duties | 24 |
| Market development outlook and conclusions | 24 |
| Appendix: | |
| Selected producers and refiners of vegetable oils, shortening, and margarine | 26 |
| Associations | 28 |

# The Market for Fats, Oils, and Oilmeal in Turkey

By
George E. Wanamaker, Fats and Oils Division
and
Gordon R. Schlubatis
U. S. Agricultural Attaché, Ankara, Turkey

SUMMARY

Turkey is a leading importer of U. S. vegetable oils. In 1961-62 it is expected to import 35,000 tons of refined soybean oil, 15,000 tons of PBSY cottonseed oil, and 20,000 tons of fancy inedible beef tallow. Anticipating the best olive crop in modern years, Turkey resumed olive oil exports on a commercial scale in 1961-62--for the first time in nearly a decade.

The most important consumers of imported U. S. liquid oils are the country's margarine and shortening producers, who will use about 45,000 tons in 1961-62. Requirements of these manufacturers are expected to increase at a rate of nearly 10 percent annually, resulting in an estimated import requirement for these industries of 60,000 to 65,000 tons by 1965, or substantially above the 1961-62 level of about 45,000 tons. Liquid oil requirements for all other purposes are expected to show an even greater proportionate increase, rising from a current level of 5,000 tons annually to 15,000-20,000 tons by 1965. This latter category includes an increase in imports to maintain more adequate carryover stocks.

While accurate current data on the production of soap are generally not available, it appears that production and consumption are increasing at nearly 5 percent annually, or somewhat faster than the increase in population. Since domestic soapstock availabilities are expected to remain at about their current levels, Turkey's requirements for imported soap fats are expected to rise from the 1961-62 level of 20,000 tons to about 30,000 tons by 1965.

For oilseeds, Turkey is on an export basis and likely to remain so, though increasing domestic requirements may somewhat reduce export availabilities.

A government-owned mixed-feed industry is developing rapidly despite the fact that municipal price ceilings have retarded production and marketing of livestock and poultry products and that prices fail to provide adequate incentives to producers. Production of formula-type mixed feeds is estimated to have totaled 12,000 tons in 1961, for which about 1,500 tons of oilcake was used. Optimistic forecasts indicate an output of about 100,000 tons of mixed feeds in 1965, including a consumption of about 20,000 tons of oilseed cake and meal. The projected modest increase in the domestic requirements of oilcake by the mixed-feed industry is not likely to mean much reduction in the 125,000-150,000 tons of oilcake exported from Turkey annually.

## GENERAL CHARACTERISTICS

Turkey, with a total land area of 296,184 square miles, is approximately the size of Texas and Louisiana combined. Its population (nearly 28,000,000 by the 1960 census) is increasing at an estimated rate of 2.85 percent a year. The largest city is Istanbul, with a population of about 1.7 million.

Turkey's economy is predominantly agricultural. More than three-quarters of the labor force is engaged in farming and related occupations. Per capita income, less than $200, is among the lowest in Europe and lower than in neighboring Cyprus and Lebanon.

Turkey's basic economic problem is the attainment of a rapid rate of growth without sacrificing financial stability. Turkey is confronted by the three-fold need of meeting the food requirements of a rapidly expanding population and one which is gradually becoming increasingly urbanized, of providing an exportable surplus of agricultural goods (agricultural products still constitute the great bulk of Turkey's exports), and of increasing the income and consumption levels of its large agricultural population. Increased agricultural production and improved

efficiency are needed; holdings are small, and crop acreage may have already exceeded its safe limits. Other employment opportunities are needed in industry and trade for the increasing labor force. Turkey is dependent upon imports of many raw materials and capital goods to meet its investments and consumption needs. A large external debt imposes a heavy burden on Turkey's limited foreign exchange earnings.

## SOURCES OF SUPPLY

### Oilseeds

Turkey imports no oilseeds or other oil-bearing materials. Its output is sufficient for commercial exports in small quantities. In 1960-61 Turkish production of oilseeds and other oil-bearing materials was estimated at nearly 855,000 metric tons -- considerably below the 1,073,000 tons forecast for 1961-62. The substantial increase in the 1961-62 production forecast is primarily due to the sharp increase in olive production with a 30-year record crop--a cyclical phenomenon in all producing countries--and increased output of cotton. Sunflowerseed production continues to show a marked decline. The output of all other oilseeds is relatively insignificant in the total and shows no meaningful trend.

TABLE 1.--Oilseeds: Production, crushing, and vegetable oil production, 1960-61

| Type | Production | Crushing | Vegetable oil production |
|---|---|---|---|
| | *1,000 metric tons* | *1,000 metric tons* | *1,000 metric tons* |
| Olives | 350.0 | 250.0 | 45.0 |
| Cottonseed | 288.0 | 242.0 | 36.5 |
| Sunflowerseed | 100.0 | 81.5 | 19.6 |
| Sesameseed | 42.0 | 15.0 | 7.2 |
| Poppyseed | 24.5 | 12.0 | 4.4 |
| Flaxseed | 20.0 | 8.6 | 2.4 |
| Peanuts (shell) | 15.0 | 0 | 0 |
| Hempseed | 5.5 | 1.9 | .6 |
| Soybeans | 5.3 | 0 | 0 |
| Rapeseed | 4.0 | 0 | 0 |
| Safflowerseed | .5 | 0 | 0 |
| Total | 854.8 | 611.0 | 115.7 |

Government of Turkey, General Statistical Agency, Ankara, and Office of the U.S. Agricultural Attaché, Ankara.

Olives are the country's most important oil-bearing materials. Olive tree culture is concentrated in areas near İzmir, particularly Aydın, Balikesır, and Muğla. An important secondary area includes Gaziantep and Hatay, near the Gulf of Alexandretta. While the number of olive trees continues to show a sharp upward trend (1936-39 average, 28 million; 1956-59 average, 50 million), the yield per bearing tree has declined from an estimated prewar average of 19 pounds to a 1956-59 average of 18. Poor cultivation practices, insufficient fertilizer, and low producer incentives continue to restrict the rapid development of this, the country's most important oil crop.

Cotton-producing areas closely parallel the country's major olive-producing regions in western and southwestern Turkey, including Seyhan, Hatay, İzmir, and Antalya. While cotton is still produced in nonirrigated areas, the increase in recent years has been attributed to an expansion in irrigated areas with correspondingly higher yields. Industry and government projections for domestic cottonseed production vary widely. It seems probable that increased prices, due to greater competition for seed and fiber by Turkey's textile and oilseed-processing industry, will result in further increases in production and eventually in reduced or restricted exports of seed. However, expansion of cotton acreage will require substantial outlays of fixed capital investments for irrigation systems, land reclamation, fertilizers, and similar purposes, and such funds are in acutely short supply in Turkey.

Sunflower production, concentrated in Thrace and northwestern Turkey, continues a sharp decline due primarily to the destructive parasite Orobanche (broomrape). Infestations by this parasite have resulted in reduced sunflower acreage. It would appear that several years will be needed to introduce Orobanche-resistant varieties on a commercial scale and arrest the current trend to reduced sunflower production.

Soybean production, amounting to about 5,000 tons in 1961, is concentrated on the shores of the Eastern Black Sea region. The prospect for increased production of this crop is limited by its competition for land with high cash crops such as tea and tobacco which are indigenous to the region. With the establishment of a soybean-processing factory at Ordu, scheduled since 1958, soybean production may be expected to reach 10,000 to 15,000 tons and exports to be reduced or discontinued. 1/ The cultivation of sesame, one of Turkey's oldest oilseed crops and also preferred in bakery products, has shifted from its home in Thrace and now is found in many areas of the mainland, particularly Seyhan and Antalya. Production of sesame has remained below the level of the mid-1950's, but is likely to increase at about the current projected increase in population--nearly 3 percent annually--from its more average 1960-61 level of 42,000 metric tons.

Flaxseed production is expected to decline sharply in 1961-62 owing to lower prices. Production declined steadily from 1950 through 1956 and now is about 20,000 tons. Little change in flaxseed production or acreage is forecast.

A modest increase in hempseed production has resulted from a shift in acreage out of sunflower. This shift may be expected to continue until the sunflower parasite is controlled.

Peanuts are produced in the Gaziantep region of Turkey, for direct consumption as a food. Acreage and production of peanuts continue to increase steadily owing to favorable prices to farmers for this crop. Production may be expected to continue expanding at up to 5 percent annually through 1965.

Rape and safflower are minor oil crops which are new to Turkey. Rape production, which declined steadily from 1950 to 1956, has made a sharp recovery in recent years. Future production will be greatly influenced by prices in foreign markets.

In 1959-60, the last year for which complete data are available, Turkey exported the following quantities of oilseeds:

---

1/ This is to be a solvent unit, batch type, of Polish manufacture, fully equipped with refining units.

| | Quantity<br>*1,000 metric tons* | Major country of destination |
|---|---|---|
| Flaxseed | 11.5 | Lebanon, Italy, Greece, Israel |
| Sunflowerseed | 13.0 | Lebanon, Hungary, Israel, Czechoslovakia |
| Cottonseed | 6.5 | Lebanon |
| Hempseed | 3.0 | Italy, Greece, West Germany |
| Poppyseed | 2.0 | West Germany, United States |
| Soybeans | 3.4 | Israel, Hungary, Czechoslovakia |
| Peanuts | 1.6 | Lebanon, West Germany |
| Other | 1.0 | France, Belgium |
| Total | 42.0 | |

Exports of oilseeds are maintained to improve the foreign exchange position of the country and to meet bilateral trade agreements, particularly barter agreements with Soviet Bloc countries in Eastern Europe. In some cases--for example, Lebanon--the proximity of the foreign market encourages exports. There appears to be little prospect for increased exports of oilseeds from Turkey, and increased domestic requirements, primarily in the form of new processing installations, may reduce somewhat the exportable quantities of sunflower, cottonseed, and soybeans.

## Vegetable Oils and Animal Fats

Beginning stocks in the 1960-61 year--80,300 metric tons, almost entirely seed oils--were abnormally high as the result of high prices established for vegetable oils imported from the United States under Title I of Public Law 480 (the Agricultural Trade Development and Assistance Act of 1954). During 1960, the price to users of these oils from government-held stocks was substantially above the corresponding prices for domestic oils. As the domestic supplies became depleted and prices rose above the price established for government-held vegetable oils, the U. S. oils were rapidly purchased by margarine and soap manufacturers, and stocks dropped to an uncomfortably low level of only 20,200 tons by October 31, 1961. 2/

Production of vegetable oils and animal fats in 1960-61 is estimated at 226,600 tons. This is somewhat below the previous year's figure and considerably below the level of 272,800 tons forecast for 1961-62. The increased output forecast for 1961-62 is due almost entirely to the favorable olive crop. Slight decreases in sesame, a sharp decrease in sunflower, and a modest increase in cottonseed oil are forecast for 1961-62.

In 1960-61 it is estimated that about 222,700 tons of vegetable oils and animal fats were consumed for edible purposes--about 17.6 pounds per capita. This level of edible fat consumption is expected to increase slightly in 1961-62 and may approximate 18 pounds. In comparison with that of Europe, particularly Western Europe, Turkey's consumption of edible fats is extremely low. However, many neighboring countries, including Syria (15.2 lb.), Iran (9.7 lb.), Iraq (10.6 lb.), and Lebanon (19.0 lb.), are also important fat-deficit areas.

Industrial consumption of fats is estimated to have totaled about 54,000 tons in 1960-61 and may climb to 64,400 in 1961-62. The soap industry is the major industrial consumer of fats in the form of hydrogenated soybean oil, sulfur oil, foots from various refined oils, and tallow. The production of soap fats in Turkey is substantially below the country's requirements and imports are expected to supply an ever-increasing share of the total. In 1961-62 the use of hardened U. S. soybean oil is expected to be discontinued in soap manufacture in favor of less expensive U. S. beef tallow.

---

2/ In view of the general lack of data regarding the production and distribution of vegetable oils, by type, and the complete absence of statistics on animal fats, the accompanying figures and those in the related tables should be considered estimates, at best.

TABLE 2.--Fats and oils: estimated supply and distribution, November 1, 1960 - October 31, 1961

| Item | Estimated 1960-61 | Forecast 1961-62 | Forecast 1962-63 |
|---|---|---|---|
| SUPPLY | | | |
| Stocks, November 1: | *1,000 metric tons* | *1,000 metric tons* | *1,000 metric tons* |
| Olive oil | 1.0 | 1.0 | 26.0 |
| Cottonseed oil | 45.2 | 16.7 | [1]/11.5 |
| Soybean oil, liquid | 19.4 | -- | |
| Soybean oil, hardened | 14.2 | 2.0 | -- |
| Tallow, other slaughter fats | .5 | .5 | 5.0 |
| Sulfur oil | -- | -- | 1.8 |
| Total | 80.3 | 20.2 | 44.3 |
| Production: | | | |
| Olive oil | 45.0 | 90.0 | 40.0 |
| Sulfur oil | 8.4 | 16.8 | 7.0 |
| Cottonseed oil | 36.5 | 39.8 | 42.0 |
| Sunflowerseed oil | 19.6 | 12.0 | 9.0 |
| All other seed oils[2] | 49.6 | 46.2 | 45.0 |
| Tallow, etc. | 29.5 | 30.0 | 30.0 |
| Butter and ghee | 38.0 | 38.0 | 38.0 |
| Total | 226.6 | 272.8 | 211.0 |
| Imports: | | | |
| Seed oils | -- | 50.0 | 80.0 |
| Tallow | -- | 20.0 | 30.0 |
| Total | -- | 70.0 | 110.0 |
| Total supply: | | | |
| Olive oil | 46.0 | 91.0 | 66.0 |
| Sulfur oil | 8.4 | 16.8 | 8.8 |
| Seed oils | 184.5 | 166.7 | 187.5 |
| Tallow, etc. | 30.0 | 50.5 | 65.0 |
| Butter and ghee | 38.0 | 38.0 | 38.0 |
| Total | 306.9 | 363.0 | 365.3 |
| DISTRIBUTION | | | |
| Exports: | | | |
| Olive oil | -- | [3]/10.0 | 10.0 |
| Oilseeds, oil equivalent | [4]/10.0 | 10.0 | 10.0 |
| Total | [4]/10.0 | 20.0 | 20.0 |
| Edible consumption: | | | |
| Olive oil | 39.0 | 45.0 | 40.0 |
| Total seed oils | 125.2 | 130.3 | 135.0 |
| Butter | 38.0 | [5]/38.0 | 38.0 |
| Tallow, etc. | 20.5 | 21.0 | 20.0 |
| Total | 222.7 | 234.3 | 233.0 |

TABLE 2.--Fats and oils: estimated supply and distribution, November 1, 1960-October 31, 1961 (Continued

| Item | Estimated 1960-61 | Forecast 1961-62 | Forecast 1962-63 |
|---|---|---|---|
| DISTRIBUTION (Continued) | *1,000 metric tons* | *1,000 metric tons* | *1,000 metric tons* |
| Industrial consumption: | | | |
| Olive oil | 6.0 | 10.0 | 5.0 |
| Sulfur oil | 8.4 | 15.0 | 8.0 |
| Seed oils | 30.6 | 14.9 | 15.0 |
| Tallow, etc. | 9.0 | 24.5 | 39.0 |
| Total | 54.0 | 64.4 | 67.0 |
| Ending stocks: | | | |
| Olive oil | 1.0 | 3/26.0 | 11.0 |
| Sulfur oil | -- | 1.8 | .8 |
| Seed oils | 18.7 | 11.5 | 27.5 |
| Tallow, etc. | .5 | 5.0 | 6.0 |
| Total | 20.2 | 44.3 | 45.3 |
| Total distribution: | | | |
| Olive oil | 46.0 | 91.0 | 66.0 |
| Sulfur oil | 8.4 | 16.8 | 8.8 |
| Seed oils | 184.5 | 166.7 | 187.5 |
| Tallow, etc. | 30.0 | 50.5 | 65.0 |
| Butter, ghee | 38.0 | 38.0 | 38.0 |
| Total | 306.9 | 363.0 | 365.3 |

1/ Total vegetable oils, including liquid soybean oil.

2/ Includes oil equivalent of peanuts, sesame, poppyseed, tobacco seed, hempseed, cottonseed, sunflowerseed, linseed, etc., consumed as such or exported.

3/ Availability for export may range up to 25,000 tons.

4/ This figure is estimated, as a large portion of oilseeds exported is not classified by type of seed. In previous years the oil equivalent of exported seeds has ranged to 15,000 metric tons.

5/ Butter and animal fat statistics are not available. These data are estimated, at best.

Whereas foreign trade was not a factor in the 1960-61 supply of vegetable oils and animal fats for Turkey, it is expected to play a significant role in 1961-62. Beginning stocks of only 20,200 dipped further in November 1961 and reached "emergency levels"--a point where sales to commercial consumers were reported to have been temporarily stopped. It is probable that stocks will be replenished by substantial imports of oils and tallow in early 1962. Further, Turkey reentered the olive export business for the first time in nearly a decade, exporting over 2,000 tons in October-November 1961.

It is too early to evaluate the extent to which Turkey will desire or be able to penetrate the world's major olive oil markets. To estimate Turkish olive oil exports at 10,000 tons in 1961-62 may be too conservative, since an additional 25,000 tons will be available for export if current production estimates are confirmed. Exports will depend upon the relationship of internal and external olive oil prices and the ability to redevelop a marketing system.

Ending stocks for 1961-62 appear adequate but are actually deceiving. Olive oil, which constitutes the bulk of the stocks of fats and oils, is a specialized commodity generally too expensive for margarine manufacture and soap production. The less than 7,000 tons of tallow and oil soapstocks which are expected to be carried over constitute less than 6 weeks'

requirement for the industry. It appears that a 9-week stock of 10,000 tons would preclude the recent situation when stocks were literally nonexistent and soap production was sharply curtailed. Liquid seed-oil stocks are expected to decline to less than 12,000 tons, or 7 weeks' requirement for the industry. A minimum of 12 weeks in carryover stock or about 20,000 tons, would insure even production and permit crisis-free operation, and 25,000 tons would permit greater flexibility in long-term planning by the industry.

Any projection of fats and oils import requirements for Turkey must be carefully qualified. Even the 1961-62 data presented in table 2 are forecasts contingent upon many factors which cannot be accurately predicted. However, assuming for 1962-63 (1) a slight decrease in per capita consumption of fats and oils, which appears to be a cyclical phenomena in Turkey related to olive production, and (2) ending stocks about the same as in the previous year, but somewhat better distributed, Turkey could require imports of about 80,000 tons of vegetable oils and 30,000 tons of tallow from the United States.

Oilcake and Meal

Official statistics do not report the domestic production of oilmeal and cake in Turkey. On the basis of reported oilseed production and utilization for oil crushing, and after allowance for shell wastes, etc., it is estimated that oilcake and meal production for Turkey approximated 150,000 tons in 1960-61. In addition, olive cake output in 1960-61 is estimated to have totaled 205,000 tons. 3/ Seed-oil cake production continues to show a slow but steady increase, a trend which is expected to continue.

Cottonseed cake is the country's most important oilseed cake and source of vegetable protein. Cottonseed cake production makes up 80 percent of total production. Sunflower seed cake, production of which has been declining in recent years, is the only other oilcake produced in commercial quantities and accounts for 15 per cent of total output. Sesameseed cake is important in and near the areas of production. Cottonseed, sunflowerseed, and sesameseed cake are all used in the country's expanding mixed-feed industry.

Turkish exports of cottonseed cake, from delinted and decorticated cottonseed, average over 70,000 tons annually and provide an important source of foreign exchange. The cake is generally single pressed, with a high oil content varying between 4.5 and 6.0 percent.

Only one processor located in İzmir reprocesses the cake by solvent, reducing the oil content to about 0.5 percent. Denmark is the primary importer of Turkish cottonseed cake, having imported over 67,000 tons in 1959-60.4/ Other important importers include Sweden (5,874 tons), Hungary (5,036 tons), and Yugoslavia (4,731 tons). Exports of oilcake from Turkey for recent calendar years are as follows:

| | 1955 | 1956 | 1957 | 1958 | 1959 | 1960 |
|---|---|---|---|---|---|---|
| | *1,000 metric tons* | *1,000 metric tons* | *1,000 metric tons* | *1,000 metric tons* | *1,000 metric tons* | *1,000 metric tons* |
| Cottonseed ..... | 62.9 | 75.8 | 54.6 | 72.6 | 84.1 | 87.0 |
| All other..... | 40.2 | 54.0 | 43.7 | 33.2 | 45.1 | 48.8 |
| Total ..... | 103.1 | 129.8 | 98.3 | 105.8 | 129.2 | 135.8 |

1/ Primarily sunflower, hempseed, rapeseed, and poppyseed.

In 1960-61, following a severe shortage of feed grains in Eastern Turkey, an attempt was made to curtail the export of oilcakes, particularily cottonseed, and divert these quantities to the deficit regions of the interior. The attempt proved unsuccessful as drought-stricken farmers were not provided with the credit facilities to purchase the needed oilcake. Further,

3/ It is estimated that up to 50 percent of olive-oil cake containing 6 to 10 percent oil is commercially available for oil extraction. This extracted, high-acidity olive oil (up to 40 percent acidity) is used primarily in the soap industry. Olive-oil cake not further processed is generally burned as fuel or wasted. It has no protein significance in feeding.

4/ This high-oil-content cottonseed cake is solvent-extracted in Denmark and will yield annually from 3,000 to 5,000 metric tons of edible oil. Only one factory in İzmir exports extracted oilcake.

the cost of transporting the cake to the livestock region of Eastern Turkey was prohibitive. The export of oilcake was again permitted and continues into the 1961-62 crop year. Until the initiation of a radical improvement in livestock management which may involve institutional changes, including a more favorable pricing arrangement--oilcake exports can be expected to continue, in spite of the country's chronic deficit of protein for animal feeding.

## THE VEGETABLE OIL INDUSTRY

### Structure and Capacity

A survey conducted in 1958 reported that the vegetable-oil industry of Turkey included 180 oilseed processing plants operating with both screw and hydraulic presses, one solvent extraction plant, and 43 plants with refining capacity. 5/ İstanbul and İzmir are the country's major oil-processing regions. Secondary areas of importance include Tekirdağ, Edirne, and Adana. Crushing in the İstanbul, Edirne, and Tekirdağ regions is generally restricted to sunflowerseed, although İstanbul is an important center for linseed, sesameseed, and refined cottonseed and soybean oil and contains the country's most important hardening plant. Cottonseed is the most important raw material processed in the İzmir and Adana areas.

The oilseed-processing capacity is continually undergoing changes; smaller, older units are being replaced by more efficient modern ones, particularly in the cotton areas. Operational capacity of reporting firms probably exceeds 1.1 million tons annually, or three times the volume of seed available for processing from domestic materials, which averages between 300,000 and 350,000 tons annually -- excluding olives. This excess capacity in the total picture tends to obscure some geographic imbalances in capacity. With the continuing decline in sunflower production, small rural mills in the northwestern portion of Turkey--the country's main growing area--are operating well below capacity; seed supplies last less than three months in most areas. In the Adana area, a major cotton-producing region, installed crushing capacity theoretically exceeds the local availability of cottonseed. However, much of the equipment is out-dated and high-cost, and buyers in İzmir can successfully bid for Adana cottonseed, thus more than making up the cost of transportation by the savings in operating efficiency.

On the basis of 330 operational days per year, the 1958 refining capacity of the country's 43 refining units was estimated to exceed 236,000 tons annually. Considering the marked recent expansion in known facilities, particularly in İstanbul, this figure must be considered conservative and estimated current capacity is probably nearer 300,000 metric tons. The country's two largest refineries, located in İstanbul and İzmir, include foreign participating capital, Dutch and British respectively. These larger, more efficient refineries are becoming an important factor in the marketing of vegetable oils in the form of margarine and shortening. As the refining equipment in these firms is of the modern continuous type with high level of optimum operation, the trend has been for these companies to contract for larger and larger quantities of oil semiprocessed by other plants. This trend has contributed to increasing the refining capacity at these large factories and idling some of the refining capacity at many of the widely scattered factories delivering the semirefined oil. The estimated current refining capacity of Turkey is about double the present level of crude oil availability.

### Seed Processing

Cottonseed.--Cottonseed processing plants, as in the United States, are principally located in or near the important areas of cottonseed production--İzmir, İskenderun, and Adana. All cottonseed handled is of domestic origin and arrives in the factory either in the form of seed cotton or sacked with one cut of linters taken. Cottonseed is not generally dried but stored in seed houses awaiting delinting. Most factories, while desiring to purchase their entire year's requirements of cottonseed at once, find their capital resources so restricted that purchases must be made at numerous intervals during the season. Seed-storage facilities generally range

---

5/ Union of Chambers of Commerce, *The Vegetable Oil Industry of Turkey, 1958*, Ankara.

in capacity up to 5,000 or 8,000 tons, some of which are rented and not owned by the factories. One seed house of 4,000-ton capacity in İzmir is a completely modernized, fully mechanized Muskogee type.

After cleaning, cottonseeds are passed through delinting machines where up to two cuts of linters are generally taken, in a two-stage operation. The seeds are then dehulled and the hulls are generally burned as fuel for the boilers. The decorticated kernels are flaked by rolls, cooked in vessels in vertical rows of 3, 4, or 5, and put through screw presses to expel the oil, an operation that engages the majority of the 256 automatic screw presses in the country. The oil is then filtered and stored.

The oil-content residual of the cottonseed cake will vary from 4.5 percent in the few very efficient plants to a more general 5 to 6 percent. Only one plant in İzmir reprocesses the cottonseed cake by solvent extraction and further reduces the oil content in the cake, to 0.5 percent or less. The high-oil-content cottonseed cake is exported, cracked, and bagged primarily in Denmark, where the cake is solvent extracted.

Continental (U. S.) gins were commonly observed throughout Turkey and some Carver (U. S.) delinting equipment is being used. Presses were generally of West European origin, including MIAG (Germany), Olier (French) and Rose-Downes (England), although some French Oil Mill Machinery Co. (U. S.) equipment was observed in İzmir.

Sunflowerseed.--The plants where sunflowerseed oil is produced are concentrated mostly in the region of Thrace. Two kinds of production units are employed in these plants: Hydraulic

TABLE 3.--Vegetable oil industry: Seed-crushing capacity, by area, 1958

| Area | Plants | Presses | | Seed capacity |
|---|---|---|---|---|
| | | Screw | Hydraulic | |
| | *Number* | *Number* | *Number* | *1,000 metric tons* |
| Adapazarı | 4 | 5 | 4 | 20 |
| Adana | 6 | 23 | 4 | 110 |
| Bursa | 4 | 2 | 4 | 10 |
| Edirne | 18 | 24 | 11 | 60 |
| İskenderun | 3 | 12 | -- | 120 |
| İstanbul | 18 | 68 | 4 | 190 |
| İzmir | 14 | 44 | 11 | 1/300 |
| Kırklareli | 23 | 22 | 18 | 60 |
| Mersin | 2 | 7 | -- | 75 |
| Tekirdağ | 30 | 36 | 18 | 90 |
| Other | 58 | 13 | 12 | 40 |
| Total | 180 | 256 | 86 | 1/1,075 |

1/ Excluding capacity at one solvent extraction plant with an estimated capacity of 25,000 tons annually.

Union of Chambers of Commerce, *The Vegetable Oil Industry of Turkey, 1958,* Ankara.

and screw presses. Small establishments which have hydraulic presses usually express oil on a fee basis for farmers. The oilseeds are first passed over a screen to clean out the foreign bodies such as stones, soil, and debris. They are then transferred to a decorticating unit called a baraban. In small plants, hulls are partly separated from the kernel, but 7 to 8 percent of the hulls remain.

In older equipment, small amounts of hulls are said to facilitate oil recovery. After decortication, the seeds are cooked in directly heated vessels. The cooked seeds are pressed in hydraulic presses. The oilcake residual contains from 9 to 13 percent oil and is generally exported or turned over to another plant where there are screw presses for a second pressing. Screw presses reduce the oil content to 6 or 6.5 percent. The hulls are burned as fuel in the furnaces; small amounts of cake are sold as livestock and poultry feed.

Plants with screw presses usually process the seeds that they purchase. Such establishments normally have two or more screw presses; and, unlike plants with hydraulic presses, they also have steam boilers, rollers, and filter-presses. The sunflowerseeds are sifted and cleaned and then cracked. The hulls are separated, but as in hydraulic processing, some of the hulls--in this case about 10 percent--remain with the seeds. The separated hulls are burned in the furnaces of the steam boiler that heats the roasters. The next step is to crush the seeds with rollers and break them into flakes, which are sent to the cookers above the automatic presses via elevators. The cooking process is accomplished at 80°-85°C. in one or two stages depending on the size of the press. In screw presses, the oilcake comes out on one side while the crude oil is collected at the bottom. It has to be passed through filter-presses. Very often the pressing operation in screw plants is done in two stages. The oilcake coming out of the first press is broken into small pieces, cooked, and sent to the second press. In this way the oil content in the cake is reduced to 6 percent.

Sesameseed.--The plants for the production of sesame oil operate in a primitive fashion, with most of the work done by hand. The seeds are first cleaned in screens, then passed through electrically-driven stone rollers and placed in large boilers over a furnace. Some oil left over from previous operations is poured over the mass to help withdraw the oil from the seed more easily. The paste thus obtained is collected in haircloth sacks and crushed in manually operated presses. The final oilcake of sesame contains about 9 to 11 percent oil.

Linseed is treated in the same way as sesame.

## Vegetable Oil Refining

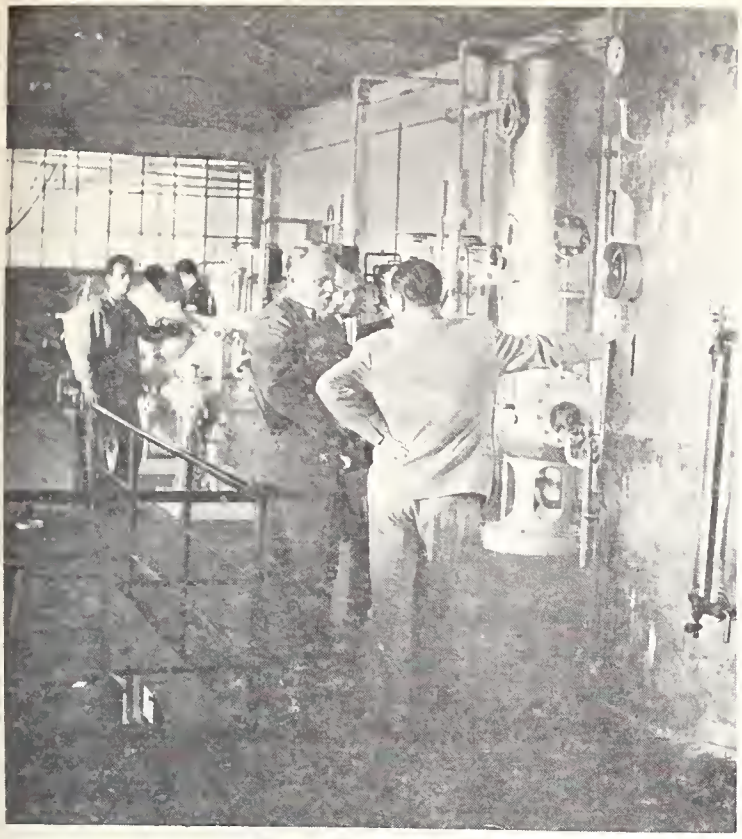
Facilities and Methods.--İstanbul and İzmir are the vegetable-oil refining centers of Turkey. Capacities in these areas have been increased in recent years, and the extension of the operating time per year, which is common in the larger factories, means a further marked increase in the total working capacity of the country.

The batch system of neutralization is most commonly used in Turkey, although the largest plants employ the more efficient continuous method. Average refining losses under the batch system have been conservatively estimated at 7 to 8 percent, but probably run as high as 10 percent in the majority of the smaller enterprises. Caustic soda is the common reagent. The Largi method is common in Turkey.

Bleaching is done under vacuum with activated earths commonly used, although some open tank units are still in operation. The normal bleaching temperature is 114°- 116°C.

Several factories that refine sunflowerseed, cottonseed, or imported coconut oil use a winterizing system, a method of rapid cooling to remove some of the saturated glycerides. Since no seed oils are marketed in transparent containers, it was not possible to form a true opinion on the extent of winterizing. In some areas, particularly İzmir, the winterizing units appeared to be seldom in use.

All vegetable oils except olive oil are deodorized. The batch deodorizing system is most common in Turkey. Deodorizing units generally vary in size from 1.5 tons to 4 tons, although larger units are operational in two plants in İstanbul and İzmir. Reportedly, oils are subjected to temperatures of from 180° to 225° C and to high vacuums of 2 to 10 mm. pressure. Based on observations in nearly half of the country's refineries, however, it would appear that the



Refining equipment in a modern vegetable oil factory in İzmir.

range of deodorizing temperatures fell more nearly between 165°C and 180°C, only two units being capable of temperatures in excess of 180°C.--one in İzmir and one in İstanbul. Observed high vacuum readings seldom were as low as 2-3 mm. and frequently went substantially over 10 mm., with many reporting a range of 30 mm. to 40 mm.

Hydrogenation facilities were observed to be in operation in İstanbul and İzmir. One small hydrogenation unit is reported in Antalya.6/ The İstanbul facility, the country's largest and most important, is used to harden stock for two products marketed as margarine. One product, by far the largest in terms of volume of production and not requiring refrigeration, is similar to shortening or hydrogenated cooking fat. The other, less granular, is a true table margarine. The hydrogenation capacity of the İstanbul facilities, which have recently been significantly expanded, is in excess of 60,000 tons annually. The installed capacity at İzmir is estimated at 20,000 tons annually, while that of the Ceyhan facility is estimated at under 8,000 tons.

Packaging and Merchandising.--Small canning facilities were commonly observed operating in vegetable-oil refining plants. These facilities utilized some semiautomatic machines, all of imported West European manufacture, but required a large amount of hand labor. The 17-kilogram gross tin was most commonly used, although containers of 2, 4, and 6 kilograms were used for table grades of olive oil. In the İstanbul area cans of 5 kilograms are now reappearing for use in marketing fully refined seed oils for household use.

Only in the İstanbul area, some refiners purchase their requirements of tin cans fully prepared and lithographed from specialized tin-container manufacturing companies. This system appears particularly favorable from the cost standpoint, since canning facilities at plants employ costly equipment and operate irregularly at far below the estimated levels needed to economically justify such wide-scale use.

Merchandising of products varies considerably by type of manufacturer. The large factories with foreign capital participation employ an elaborate selling organization well represented throughout Turkey. The İstanbul factory permits regional representatives a wide degree of flexibility in establishing marketing techniques. While large-scale advertising is generally directed from the central office, regional offices plan and carry out many related activities. The central office establishes a maximum price, but latitude in pricing below that level is permitted. Only the country's largest manufacturers practice successful marketing, which includes techniques like a long-range program of sales promotion and advertising, simplified and flexible credit both to suppliers and to sales outlets, and marketing research to determinc consumer preferences. Much can be done to broaden the market for edible fats and oils by wider use of marketing techniques proven useful under conditions like those indigenous to Turkey.

---

6/ Probably Ceyhan near Adana.

TABLE 4.--Vegetable oil industry: Refining capacity by area, 1961

| Location | Plants | Daily refining capacity |
|---|---|---|
| | *Number* | *Metric tons* |
| Adapazarı | 2 | 30 |
| Adana | 6 | 75 |
| Antalya | 1 | 10 |
| İskenderun | 2 | 15 |
| İstanbul | 14 | 1/320 |
| İzmir | 14 | 1/275 |
| Lüleburgaz | 1 | 5 |
| Mersin | 2 | 30 |
| Nazilli | 1 | 90 |
| Total | 43 | 2/850 |

1/ Estimated.

2/ Approximately 280,500 metric tons annually on the basis of 330 operational days per year.

Union of Chamber of Commerce, *The Vegetable Oil Industry of Turkey, 1958,* Ankara.

## Olive Processing

The olive oil industry, which contributes the most important type of vegetable oil produced in Turkey, is gradually developing out of its primitive facilities and becoming a modern industry. The slow pace of this development is due to the financial outlays required in such a conversion and to the traditional concept that only virgin olive oil produced by the ancient methods enjoys the highest mark of distinction -- excellent flavor.

Olives produced mainly in the western and southwestern portion of the country are a tree crop gathered by hand during the short November-December season. Little care is shown in timely gathering or in moving the picked olives to the factory for processing into oil, although in the time between ripening and delivery to the factory the acidity begins to mount rapidly. Once delivered to the factory the olives are immediately processed, since storage facilities are not maintained and any additional delay would be harmful. Olives generally arrive at olive-oil mills by truck in bulk, or in baskets carried in wagons, or even by camels.

The initial stage of olive processing in Turkey generally follows the classical method. Olives are washed, precut, and dumped into a crushing vat where rolling wheels of up to 2 tons grind the pulp. The residue is then placed in bags and subjected to hydraulic pressing. Whereas pressing in many countries includes 1 or 2 operations, some Turkish plants employ 3 pressings. Water, which is generally utilized in the second pressing, may not be applied until the last stage in mills using the third pressing. The press liquor (oil and black water) drains into surge tanks and is pumped into separators. Both Italian (Firenzi) and Swedish (De Laval) centrifugal separators were noted in use. In these separators of 6,000 to 7,500 rpm, the black water is

At an olive oil plant in İzmir, 17-kilogram cans filled with oil are being soldered by hand.

separated from the olive oil, which is then pumped into filling tanks. The black water flows into settling tanks from which the high-acidity oils (generally over 10 percent) are skimmed off by hand. The remaining water, which may contain some oil, is waste and is not reused.

The virgin olive oil produced in these mills, or in the more modern type where mechanical crushing precedes or replaces the classical round stones, is then marketed for canning and distribution. Olive oil containing over 4.5 percent acidity can be blended with olive oil of less than 2 percent acidity, making a more marketable salad oil; or it may be sold to refiners. After refining, the acidity is reduced to less than 1 percent, and the oil is sold as fully refined oil and not virgin olive oil. 7/ The farmer who supplied the olives will frequently receive most of the oil outturn from his olives less the commission cost for handling them, in the form of 8 to 10 percent of the oil outturn.

The olive cake byproduct in Turkey contains a relatively large amount of oil of very high acidity, up to 40 percent. If the cake is obtained after only a first pressing, a 6 to 10 percent oil content is common; after a second pressing the cake commonly contains about 4 to 6 percent oil; after a third pressing, about 4 percent. The cake is usually stored by the olive-pressing mill until it is collected by the "sulfur" oil extracting plants. At these plants, solvents are applied to the cake and a high-acidity oil, called pirine, is removed. Whereas carbon disulfide was commonly used in earlier years, it is now being replaced by hexane, benzine, and petroleum ether. Less than 20 percent of the pirine oil produced in Turkey today is extracted by the use of sulfur (carbon disulfides). 8/ In Turkey pirine oil is not further refined but is used as a basic soapstock.

## THE SOAP INDUSTRY

### Structure and Capacity

Production of soap in Turkey is carried on in a wide variety of enterprises including farm homes, oilseed and olive oil refineries, primitive small hand-operated facilities, and fully

---

7/ Virgin olive oil of over 10 percent acidity is generally not further refined but becomes a soapstock.

8/ The term sulfur oil is no longer a true definition of this type of oil produced by extraction.

TABLE 5.--Soap industry: Capacity and production of plants, 1958

| Location | Plants | Capacity per day | Production[1/] |
|---|---|---|---|
| | *Number* | *Metric tons* | *Metric tons* |
| Adana | 9 | 7.6 | 446.6 |
| Adapazarı | 9 | 9.5 | 1,675.5 |
| Antakya | 10 | 12.6 | 461.0 |
| Antalya | 6 | 2.1 | 203.0 |
| Aydın | 60 | 72.5 | 3,731.4 |
| Ayvalık | 27 | 87.0 | 5,982.7 |
| Edremit | 14 | 20.0 | 1,347.6 |
| Bursa | 10 | 8.0 | 2,073.0 |
| Gemlik | 5 | 4.6 | 3,665.2 |
| Gaziantep | 29 | 23.3 | 2,165.0 |
| Kılıc | 26 | 8.5 | 13.0 |
| Nizip | 31 | 15.0 | 1,200.0 |
| Milâs | 6 | 8.8 | 1,632.9 |
| İstanbul | 46 | 101.9 | 8,015.2 |
| İzmir | 76 | 105.9 | 14,821.2 |
| Other | 43 | 74.0 | 4,681.3 |
| Total | 407 | 561.3 | 52,114.6 |

[1/] 1955 distribution.

Union of Chambers of Commerce, *The Soap Industry in Turkey, 1958*, Ankara.

modernized medium and large-scale soap factories. İzmir, İstanbul, Ayvalık, and Aydın are the more important soap-processing centers, though the Adana-Gaziantep-Nizip area is also of considerable importance.

Soap-production statistics for Turkey are available only for certain earlier years. In 1955, production for 326 factories was reported at 52,115 tons. In 1957, the latest year for which data were available, there were 407 factories, with an output of 65,000 tons. Based on these figures soap production for later years has been estimated as follows:

| | Output |
|---|---|
| | *Metric tons* |
| 1959 | 75,000 |
| 1960 | 85,000 |
| 1961 | 90,000 |

The rated capacity of the commercial soap industry in 1957 was estimated at about 175,000 tons, and output was less than 40 percent of the industry's capacity. It is probable that much of the increase in soap production in the more recent years has taken place in existing factories and that in 1961 the soap industry was operating at about 50 percent of its rated capacity. A continued expansion in the output of soap, bringing output to above 75 percent of capacity, would be a healthy and desirable objective. The United States is sharing in the effort to increase Turkey's soap output by providing about 50 percent of the needed soapstocks under government programing.

Most of the soap produced in Turkey (about 75 percent of the total) is low-grade laundry soap. Other important types include green soap, generally of an olive or pirine oil base, which is of medium quality with fair to good cleansing action and is used especially for dish-washing and similar purposes; soapstock soap--made, as its name implies, from the foots of refined vegetable oil; soft soaps, which frequently have a sunflower oil base; and toilet soaps, which combine the best ingredients of soap fats including tallow and coconut oil. Numerous large soap factories produce and market powdered soap made from fatty acids, and at least one

At typical Turkish soap factory, Gaziantep, every operation represents much hand labor.

manufacturer in İstanbul produces a synthetic detergent in powdered form for use in the textile industry.

The most common type of soap factory in Turkey has one or two kettles of 3-6 ton capacity. The soft soap is placed on the floor in partitions, where it is then marked for cutting, stamped, allowed to dry, cut, removed from the floor, stocked again, and allowed to dry completely before being packed in bags for distribution and sale. The more conventional methods of soap manufacture are common to the large soap plants in İstanbul, İzmir, and Adana. However, the methods and processes used in soapmaking in Turkey differ from the more conventional ways in the following respects: 2/

1. In a great majority of plants, the soap is boiled over direct flame.
2. In direct-flame boiling, the necessary precautions are not taken to prevent fire hazards.
3. Cold process and semiboiled processes are not used.
4. Salting out is always done over lye.
5. For cooling and solidification of soap, the frames are still used.
6. In most plants, soap cutting and stamping operations are still performed by hand.

## Marketing Trends and Prospects

The soap manufacturers of Turkey are among the country's most outspoken optimists. Marketing problems are few. The small soap manufacturers point with pride to their low-cost operation and the quality of their soap. The large commercial poducers, who specialize in toilet soaps and soap powder, have invested substantial sums of money in up-to-date machinery and in colorful and appealing advertising programs for their products.

The greatest single handicap to the further development of the soap industry is inability to count on a stable and adequate supply of suitable soapstock. Domestic soapstocks--including high-acidity olive oil and foots, foots from seed-oil refining, hazelnut-oil foots, bone fat, and domestic tallow--normally supply between 30,000 and 35,000 tons of fats for the soap industry. On the basis of the official 63.8 percent average fat content of soap, the soap-fat requirements for 1960-61 would have ranged between 50,000 and 55,000 tons. The approxi-

2/ Union of Chambers of Commerce, *The Soap Industry in Turkey, 1958*, Ankara.

mate 20,000-ton deficit was made up by importing these materials from the United States under Title I of P. L. 480.

Through 1958, the primary soap fat imported from the United States was inedible beef tallow. Initial experiences with tallow were not satisfactory, at least in part because of attempts to saponify tallow directly. The resulting soaps developed unpleasant odor in a short time. However, blending of tallow with other soapstocks before saponification overcame this objection, and tallow is now a popularly accepted soapstock.

Between 1958 and 1961, hydrogenated U. S. soybean oil was imported for soapmaking in Turkey. The hardened soybean oil proved very satisfactory but was sold internally at a price competitive with that of edible olive oil and well above that of sulfur oil and high-acidity olive oil, the country's most important soap oils. In late 1961, when tallow again became available for U. S. Government programing, most Turkish soap manufacturers expressed a desire to return to the use of this less expensive material. The import requirements of the Turkish soap industry are expected to increase at an annual rate of 3,000 tons from the 1961-62 level of about 20,000 tons and to exceed 30,000 tons by 1965.

## THE MIXED FEED INDUSTRY

### Structure and Capacity

The government-owned mixed-feed industry of Turkey is expanding at a rate which appears to be in excess of the probable increase in livestock feeding requirements. Installed operational capacity exceeds 110,000 metric tons annually and is scheduled to increase to over 170,000 tons by the end of 1962. Production of mixed feed in 1961 is estimated at about 12,000 tons, or about 10 percent of capacity. Estimated production for the near future is as follows:

| | Quantity |
|---|---|
| | *Metric tons* |
| 1962 | 20,000 |
| 1963 | 40,000 |
| 1964 | 80,000 |
| 1965 | 100,000 |

Government-owned mixed-feed plants are located in Ankara, Konya, Erzurum, İstanbul, and İzmir, and others are being erected in Bandırma, Mersin, and Eskişehir.[10/] Mixed-feed plants, with the exception of the one at Erzurum, are located near large metropolitan areas rather than areas of livestock raising. In view of the relative inaccessibility of these plants to major livestock producing areas and the continuing relatively unfavorable prices for meat and livestock products, output of mixed-feed is expected to remain substantially below capacity.

### Marketing Trends and Prospects

The mixed-feed plants in Turkey prepare feeds on a formula and not on a custom basis. Feeding formulas are prepared to specify a minimum percent of protein, maximum amount of fiber, ash, etc. Within these limitations, however, a mixed-feed plant manager may determine what kind of ingredients will make up his protein portion. Thus, of an 18-percent minimum protein content, up to 70 percent may be obtained from oilcake and meal. The remainder will come from any other readily and economically available feeds, for example bone, fish, or meat meal. On the other hand, the entire amount may come from any one ingredient. One commonly used 18-percent protein formula for dairy cattle is as follows:

| | *Kilograms* |
|---|---|
| Wheat | 150 |
| Barley | 360 |
| Oat | 350 |
| Corn | 150 |
| Wheat bran | 150 |
| Wheat middlings | 150 |

10/ The only privately owned mixed-feed plant (İstanbul) has gone out of production.

| | |
|---|---|
| Alfalfa meal | 20 |
| Wheat gluten | 40 |
| Sunflower cake | 150 |
| Cottonseed cake | 150 |
| Meat and bone meal | 180 |
| Blood (dried) meal | 10 |
| Salt | 20 |
| Limestone | 20 |
| Molasses | 100 |
| Vitamins, minerals and antibodies | neg. |
| Total | 2000 |

Cottonseed, sunflowerseed, and sesameseed cake are the common forms of high vegetable protein in mixed feeds. Cottonseed cake is usually kept below 5 percent in poultry feeds and is generally not treated for gossypol. The domestic oilcake used in mixed feeds is generally high in oil content, up to 6 percent, and relatively low in protein, well below 38 percent for cottonseed.[11/] The oil in the cake, however, is the only form of fat in the mixed feeds produced.

Standard layer pellets rations are sold on a guaranteed analysis as follows: Crude protein, min. 18 percent; fat, min. 3.5 percent; crude fiber, max. 11 percent; crude ash, max. 11 percent. The standard dairy ration, very similar, is as follows: Crude protein, min. 18 percent; fat, min. 4 percent; crude fiber, max. 14 percent; crude ash, max. 12 percent. Mixed feeds are packed in bags of 50 kilograms (110 lb.) and 100 kilograms (220 lb.) for general use and in small bags for noncommercial poultry farms.

The İstanbul area is the center of a developing dairy and poultry industry and price incentives appear adequate to insure continued expansion. A revised pricing system based on

TABLE 6.--Mixed-feed industry: Location of plants, number of machines, capacity, and estimated starting dates

| Location of plants | Machines[1/] | Capacity | | Initial year of operation |
|---|---|---|---|---|
| | | Per hour | Annual | |
| | *Number* | *Metric tons* | *Metric tons* | |
| Ankara | 2 | 6 | 25,000 | 1958 |
| Konya | 2 | 6 | 25,000 | 1958 |
| Erzurum | 2 | 6 | 25,000 | 1959 |
| İstanbul | 1 | 6 | 18,000 | 1960 |
| | 1 | 3 | | |
| Bandırma | 2 | 6 | 25,000 | 1962 |
| Mersin | 1 | 6 | 12,000 | 1962 |
| | 1 | 3 | 6,000 | 1962 |
| İzmir | 1 | 6 | 12,000 | 1960 |
| | 1 | 3 | 6,000 | |
| Eskişehir | 1 | 6 | 12,000 | 1962 |
| İstanbul (private)[2/] | 1 | 3 | 6,000 | 1958 |
| Total | 16 | 60 | [3/] 172,000 | -- |

[1/] Government-owned unless otherwise noted. British equipment is standard.

[2/] Not operational.

[3/] Based on meal production; pellet capacity is somewhat less.

Office of the U.S. Agricultural Attaché, Ankara.

[11/] Oilcake produced at the solvent factory in İzmir contains only 0.5 percent of oil and over 44 percent protein.

TABLE 7.--Livestock numbers, by type, 1955-60

| | 1955 | 1956 | 1957 | 1958 | 1959 | 1960[1/] |
|---|---|---|---|---|---|---|
| | *Thousands* | *Thousands* | *Thousands* | *Thousands* | *Thousands* | *Thousands* |
| Cattle | 10,868 | 11,059 | 11,546 | 12,064 | 13,076 | 13,468 |
| Sheep | 26,808 | 26,444 | 27,974 | 29,209 | 33,614 | 35,294 |
| Goats, ordinary | 21,079 | 16,217 | 16,486 | 17,248 | 18,941 | 19,887 |
| Buffaloes | 1,071 | 1,056 | 1,075 | 1,122 | 1,229 | 1,267 |
| Chickens | 22,887 | 23,629 | 24,196 | 25,315 | (2/) | (2/) |
| Turkeys | 1,379 | 1,393 | 1,454 | 1,474 | (2/) | (2/) |

1/ Official Turkish Government figures. Somewhat lower estimates were prepared by the Office of the U.S. Agricultural Attaché, Ankara, as follows (in thousands): Cattle, 12,617; sheep, 31,106; goats, ordinary, 18,015.

2/ Not available.

graded marketing of livestock products might provide additional incentives particularily to the dairy and poultry raisers near Ankara, Konya, and Erzurum.

The Turkish livestock economy greatly needs increased quantities of improved feeds. Much of the livestock is being fed on maintenance-level basis, little if any feeding being undertaken for output. The development of better protein feeding for livestock is under continuing study in Turkey. The feeding of oilcake is a relatively new concept, since customarily only small amounts of sesame, poppyseed, and linseed in or near areas of production have been fed to livestock. Cottonseed and sunflowerseed cake, the primary oilcakes produced in Turkey, are also now being fed. Local publications have explained to farmers that the substitution of oilcake for feed grains will provide 2.5 to 8 times more protein, at lower cost. Farmers are gradually being acquainted with the principles of protein in livestock feeding and the advantages of purchasing meals on the basis of cost per protein unit.

An important contribution to better livestock feeding is the further development of a mixed-feed industry. The Government of Turkey is taking important steps to increase the quality and production of mixed feeds. Oilcake requirements, the most important source of protein concentrate for the mixed-feed industry, are expected to increase sharply, but will continue to remain relatively insignificant in terms of a national output.

On the basis of the 100,000-ton forecast for mixed-feed output in 1965, and calculating that 20 percent of the gross dry weight of total feed will be oilcake by 1964 compared with only 15 percent in 1961, oilcake requirements of the mixed-feed industry are estimated as follows:

| | Quantity | Share of total oilcake production |
|---|---|---|
| | *Metric tons* | *Percent* |
| 1961 | 1,800 | 1 |
| 1962 | 3,000 | 2 |
| 1963 | 6,000 | 5 |
| 1964 | 16,000 | 8[1/] |
| 1965 | 20,000 | 9[1/] |

1/ Oilcake production is expected to increase above the 1961 level of 150,000 tons.

As the ratio of oilcake to mixed feeds increases, the fiber content of the feed, now varying between 11 and 14 percent, is expected to decline to somewhat less than 10 percent, providing more efficient feed. A sizable portion of the new oilcake requirements of the mixed-feed industry for poultry rations may be soybean meal, expected to become available from processing facilities scheduled for installation in the Black Sea area.

The expanding requirements for oilcake are expected to be available from a projected modest increase in cottonseed and soybean meal production and will not significantly reduce Turkey's export availability of oilcake.

TABLE 8.--Selected oilseeds: Average wholesale prices, 1950-61

| Year | Cottonseed | Hempseed | Sesameseed |
|---|---|---|---|
| | *Dollars per metric ton* | *Dollars per metric ton* | *Dollars per metric ton* |
| 1950 | 48 | 124 | 286 |
| 1951 | 75 | 196 | 345 |
| 1952 | 55 | 246 | 381 |
| 1953 | 62 | 325 | 362 |
| 1954 | 101 | 230 | 367 |
| 1955 | 129 | 305 | 421 |
| 1956 | 136 | 389 | 559 |
| 1957 | 196 | 422 | 865 |
| 1958 1/ | 126 | 271 | 626 |
| 1959 1/ | 58 | 125 | 263 |
| 1960 1/ | 65 | 149 | 247 |
| 1961 1/ | 68 | 196 | 222 |

1/ U. S. prices reflect currency revaluation of Aug. 4, 1958.

Turkey, Central Statistical Agency, *Monthly Bulletin of Statistics*, May 1961.

## MARKETING FACTORS

### Prices and Price Patterns

Oilseeds.--Domestic oilseed prices have continued to increase and cottonseed and hempseed reached all-time peaks in early 1961. Sesameseed is more important as a raw material for pastry products, and the price tends to be less responsive to the demand for vegetable oil. Domestic oilseed prices, when adjusted to the August 4, 1958, conversion rate,12/ are more closely in line with world market prices. The apparent decline in the 1958-61 prices of selected oilseeds when expressed in terms of dollars per metric ton is largely an adjustment in the rate of exchange.

In mid-1961 the export price of soybeans, bagged, f.a.s., varied between $90 and $98 per metric ton.

Vegetable Oils.--Like the prices of oilseeds, the prices of cottonseed and olive oils reached record levels in 1961. These two oils, which provide the bulk of the country's requirements, have shown a steady upward trend in prices. It is significant that the domestic price of olive oil continues to rise in the face of increased production and--until late 1961--no recorded commercial exports. Cottonseed oil also has been able to maintain a steady price increase in the face of increased cotton output and sizable imports of U. S. vegetable oil under Title I of P. L. 480. The imported U. S. oil has helped in stabilizing the domestic price of cottonseed oil, particularly in 1959, and 1960, and the first 6 months of 1961.

U. S. cottonseed and soybean oil imported under Title I of P. L. 480 has been arbitarily priced by the Turkish importing agency, Et ve Balik. In early 1960, U. S. imported PBSY cottonseed oil was being sold at rates comparable to domestic prices for semirefined oils and was being moved out of stocks into consumption. However, by mid-1960, with no reference to purchase price or world prices, the price of imported U. S. vegetable oils was increased to 379 kuruş per kilogram, sharply above the price for domestic cottonseed oil. Semirefined soybean oil, excluding the price of the drum, was increased in price to 363 kuruş, and hydrog-

12/ U.S. $1.00 = TL9. One lira = 100 kuruş. See also p. 23.

TABLE 9.--Vegetable oils and animal fats: Average wholesale prices on the İstanbul Exchange, 1950-61

| Year | Olive oil | | Cottonseed oil | | Sesameseed oil | | Linseed oil | | Sunflowerseed oil | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *Kuruş per kg.* | *Cents per lb.* | *Kuruş per kg.* | *Cents per lb.* | *Kuruş per kg.* | *Cents per lb.* | *Kuruş per kg.* | *Cents per lb.* | *Kuruş per kg.* | *Cents per lb.* |
| 1950. . . . . | 212 | 34 | 142 | 23 | 207 | 33 | 163 | 26 | 150 | 24 |
| 1951. . . . . | 214 | 35 | 170 | 27 | 213 | 34 | 180 | 29 | 190 | 31 |
| 1952. . . . . | 202 | 33 | 164 | 27 | (1/) | (1/) | 188 | 30 | 168 | 27 |
| 1953. . . . . | 209 | 34 | 140 | 23 | 240 | 39 | 184 | 30 | 152 | 25 |
| 1954. . . . . | 278 | 45 | 217 | 35 | 233 | 38 | 210 | 34 | 223 | 36 |
| 1955. . . . . | 300 | 49 | 237 | 38 | 240 | 39 | 286 | 46 | 267 | 43 |
| 1956. . . . . | 434 | 70 | 270 | 44 | 308 | 50 | 429 | 69 | 275 | 44 |
| 1957. . . . . | 466 | 75 | 329 | 53 | (1/) | (1/) | 544 | 88 | 420 | 68 |
| 1958 2/ . . . | 484 | 56 | 307 | 35 | 617 | 71 | 647 | 75 | 404 | 47 |
| 1959 2/ . . . | 485 | 24 | 367 | 18 | 425 | 21 | 495 | 25 | 354 | 18 |
| 1960 2/ . . . | 506 | 25 | 342 | 17 | (1/) | (1/) | 451 | 23 | 390 | 20 |
| 1961 2/ 3/ . . | 550 | 28 | 424 | 21 | 380 | 19 | 485 | 24 | 408 | 21 |

1/ Not available.

2/ The price decline in terms of U.S. cents per pound indicated for 1958-61 reflects the revaluation of the currency on Aug. 4, 1958.

3/ First 6-month average.

Turkey, Central Statistical Agency, *Monthly Bulletin of Statistics*, May 1961.

enated soybean oil with a 48°C. melting point, marked "not for edible consumption," was sold for 380 kuruş. Hardened soybean oil is intended for use only as a soapstock.

The past arbitrary pricing policy of the Turkish importing agency greatly complicated the programing of exports. Domestic seed-oil production supplies about 60 percent of the country's requirements for hardened fats and liquid oils for specialized uses, such as baking and paints. If imported P.L. 480 oil were effectively utilized by being released for consumption during the periods when domestic oils have been removed from the market and consumed, and by being competitively priced, they would, as was the case in late 1960 and throughout 1961, be rapidly removed from stocks and consumed. In a fat-deficit country such as Turkey, imported seed oils help stabilize vegetable oil prices within the buying range of the country's low income population, which is chronically short of high-calorie foods like fats and oils.

Animal Fats.--Should tallow be imported for soapmaking under P. L. 480, Title I, as is recommended, resale prices would become even more of a matter for consideration. U.S. fancy beef tallow, drummed, can be delivered in Turkey at a price of about 200 to 225 kuruş per kilogram. This is significantly below the price of domestic tallow or hydrogenated soybean oil and should, if the advantage is passed on to the country's numerous soapmakers, enable a noteworthy expansion in production and a reduction in the price of soap. 13/ Any reduction in the price of soap is expected to result in a correspondingly greater increase in consumption and in demand for additional soapstocks. Any attempt to resell such imported soap stocks at prices to support the inflated domestic price of animal fats would be incompatible either with the need for obtaining maximum soap output at lowest prices to the consumer, or with that for maintaining the line against inflation. 14/

13/ Soap fats represent 60-65 percent of the gross weight of soap and about 90 percent of the cost of raw materials.

14/ Commercial production of domestic tallow is estimated at less than 6,000 tons, of which up to 3,000 tons is available for soap manufacture. Imported soap-fat requirements are estimated at 20,000 to 30,000 tons annually.

TABLE 10.--Vegetable oils: Average wholesale prices of selected vegetable oils on various exchanges, by months, July 1960-June 1961

| Type of oil | Exchange | July | Aug. | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *Cents per lb.* | *Cents per lb.* | *Cents per lb.* | *Cents per lb.* | *Cents per lb.* | *Cents per lb.* | *Cents per lb.* | *Cents per lb.* | *Cents per lb.* | *Cents per lb.* | *Cents per lb.* | *Cents per lb.* |
| Olive: | | | | | | | | | | | | | |
| Olive I . . . . . | Bursa . . . | 24 | 24 | 25 | 25 | 24 | 24 | 24 | 24 | 24 | 24 | 25 | 24 |
| Olive Extra . . | İstanbul . | 25 | 25 | 27 | 28 | 28 | 28 | 28 | 29 | 29 | 29 | 28 | 29 |
| Cottonseed, semirefined . . . | ,, . . . . . | 20 | 21 | 19 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 |
| Sunflowerseed, semirefined . . . | ,, . . . . . | 21 | 21 | 20 | 20 | 20 | 20 | 20 | 20 | 21 | 21 | 21 | 21 |
| Linseed: Boiled . . . . . | ,, . . . . . | 22 | 24 | 23 | 22 | 23 | 24 | 23 | (1/) | 24 | (1/) | (1/) | (1/) |

1/ Not available.

Turkey, Central Statistical Agency, *Monthly Bulletin of Statistics.*

Oilcake and Meal.--There are only limited price data for oilcake and meal. In early 1961, export prices for Turkish cottonseed cake, bagged, f.a.s. İzmir, averaged between $65 and $70 per ton. This high-oil-content cake from decorticated, delinted seed is sold on a combined protein/oil basis of 44 percent, of which protein may average 39 percent. The limited internal market, primarily the mixed-feed industry, pays a slight premium over world prices for the small quantitiy of cake it utilizes. The domestic buyer is not sufficiently well informed to purchase his cake on the basis of its feeding value or protein equivalent. The foreign importer, on the other hand, quotes prices on the basis of protein, and since Turkish oilcake has a low protein content, it sells at a discount.

The f.o.b. prices of selected oilseed cakes bagged for export in November 1961 are reported as follows:

| | *Dollars per metric ton* |
|---|---|
| Cottonseed | $61 - 62.00 |
| Sunflower | 60 - 61.00 |
| Hazelnut | 62.00 |
| Linseed | 72.00 |

## Transportation and Handling

Vegetable oils are imported from the United States only under Title I of P. L. 480. These oils are imported by Et ve Balik, the Turkish Government organ responsible for the administration of meat and fish production and distribution.

Vegetable oil is shipped in standard 55-gallon drums. In earlier shipments, new drums were requested, although it now appears that reconditioned drums are suitable to the industry's requirements. Drums are shipped to İzmir or İstanbul where government-controlled open storage areas are available. İzmir, İskenderun, and İstanbul are ports suitable to oceangoing freighters, but İzmir and İstanbul are crowded and turnover time may be slow. Adequate crane facilities exist at both ports to unload 500-pound drums in lots of 4 or 8, although unloading facilities on the ship are frequently more convenient and are generally used. İskenderun may be the port designated for smaller amounts of U.S. soap fats. The port is generally less crowded and can handle ships drawing up to 30 feet.

While Turkey has only limited bulk oil-handling facilities at İzmir, one large tank storage farm with a capacity of 5,000 or 10,000 tons is under industry consideration for İstanbul. The saving that such an installation would mean in transportation and handling costs is con-

Hydrogenated soybean oil stored in the open at İzmir. Drums have been somewhat damaged after two years in storage.

Another open storage area at İzmir, showing horizontal stacking of cottonseed oil drums.

servatively estimated at $500,000 annually. Tank trucks or drums are available to enable the redistribution of this oil to factories in the area or to inland points. A tank barge of about 250-ton installed capacity, with 500 tons potentially available, is being used to move cottonseed oil from İzmir to İstanbul for processing into shortening. This barge is adequate for unloading deep tanks of freighters in connection with possible future bulk imports of oil by Turkey. Limited bulk facilities are located at two sites in İzmir and at one in İstanbul. Existing bulk facilities are used only to assist in the shipment of locally produced cottonseed oil.

Handling of drums in the port storage areas at İzmir could be improved. Drums were stacked horizontally, 3 and 4 deep. Injuries to drum seams and head were noted, although these were not severe and damage was minor. Drums should be arranged for easy runoff of rain water. Storage in areas likely to accumulate moisture, such as ditches, should be avoided.

## ROLE OF THE TURKISH GOVERNMENT

### Recent Financial Trends

After a rather long period of inflation climaxed by a financial crisis in 1958, and after the institution of an economic stabilization program (which was only partially successful), the country regained a degree of economic stability in 1960, and signs of revitalization of the economy are now evident. This stability has been accompanied by, and has in fact been partly the result of, economic and business conditions which had bordered on stagnation during the period of uncertainty as to future political conditions. For example, imports, largely as the result of these stagnant business conditions, were at a somewhat lower level in 1961 than in 1960. Meanwhile, after a bad first quarter, exports picked up in 1961, with the total now estimated as equal to those of 1960, or somewhat higher. The balance of trade, therefore, is expected to be more favorable, though this is probably a temporary situation. Foreign exchange reserves, historically low because of the unfavorable balance of trade, improved considerably during the part year and now stand at something around $100 million, still low for an economy of this magnitude. Furthermore, with improvement of the general economic situation and an expected upward spur to imports, reserves are likely to decline again. Turkey has a heavy (approximately $125 million) annual foreign debt burden which constitutes a continued drain on limited foreign exchange earnings.

The basic unit of currency in Turkey is the lira. Traditionally, it has been overvalued; and in August 1958, as one element of the stabilization program, it was effectively revalued, through the establishment of premium rates, from the official rate of TL2.8 per dollar to TL9 per dollar. The premium rate was not uniformly applied, however, being only TL5.6 per dollar for tobacco until late 1960. Now, however, with the concurrence of the International Monetary Fund, the currency has been officially revalued at TL9.0 to the dollar. A lira is divided into 100 kuruş.

### Foreign Capital Investment

Foreign capital invested in Turkey under the terms of the Law To Encourage Foreign Investments is accorded preferential treatment, provided that the enterprise in which the investment is to be made will tend to promote the economic development of the country, will operate in a field of activity open to Turkish private enterprise, and will not entail monopoly or special privilege. Under this law, as amended, annual profits, interest, and dividends on approved investments and all or part of the invested capital or foreign loan may be remitted abroad in the original currency of the capital. Registered shares or stock certificates issued under this law are freely transferable between persons of all nationalities both in Turkey and abroad. The capital and interest on long-term loans and credits extended by nonresidents to enterprises in Turkey (including those of an agricultural character) may be accorded the same transfer benefits.

Transactions in securities, including their export and import, require approval where nonresidents' interests are involved.

Under the fifth import program, imports were reclassified for licensing purposes. Two categories, the "automatic allocation list" and "imports financed from foreign credits," were

eliminated, so that imports were now classified in three groups:

A free list, a list of global quotas, and a special category listing bilateral quotas for imports from countries having bilateral trade agreements with Turkey.

Capital transfers abroad by residents and capital transactions between residents and nonresidents are subject to the approval of the exchange control authorities. Foreign investments in Turkey require approval. Foreign companies and contractors established abroad who wish to do business in Turkey must import in the form of foreign exchange the capital and operating funds required by the business. In principle, assets and balances owned by nonresidents and earnings accruing to them cannot be converted into foreign currency, and are blocked if they exceed TL5,000 a year. Subject to individual permit, blocked assets and balances may be utilized within Turkey, except as capital for business.

Exchange control is administered by the Ministry of Finance. In principle, the Central Bank of the Republic of Turkey issues import certificates required for imports by both the public and the private sectors. However, the Ministry of Finance distributes exchange for immediate and unforeseen investment needs, within a global quota placed at its disposal, and certain imports require the permission of the relevant ministry or department, for public security or health reasons.

## Import Procedures

Purchasing, shipping, warehousing, and selling formalities for importing goods of U. S. origin under P. L. 480 are handled by the Et ve Balik Kurumu, the government importing agency. Since the goods are imported to compensate for the deficit in domestic production, representatives of the Ministry of Commerce, the Union of the Chambers of Commerce and Industry, and the E.B.K. meet each year to decide the amount of imports needed.

Since the financial resources of the E.B.K. are insufficient to cover the value of imports, a rediscount credit has been established at the Central Bank of the Republic of Turkey.

The authority to purchase rests in a Turkish Mission in Washington, D. C. Specifications are advertised in U. S. newspapers in accordance with the usual custom, and tenders are taken. The Mission in Washington then awards the contract to the bidder offering the most favorable quality, price, and delivery conditions.

To ship the goods from U. S. ports to Turkish ports, the Mission at Washington must charter U. S. vessels to carry 50 percent of the material supplied, while the E.B.K. plans to charter Turkish vessels to carry the other 50 percent within the supply period. Letters of credit for both cost and freight are established under the authority of the Ministry of Finance without an advance deposit of the TL countervalue. As the shipping documents arrive at the Central Bank of the Republic of Turkey, the countervalue of the document (cost and freight) is deposited to the account of the U. S. Embassy and the documents are withdrawn to complete the customs formalities. After the goods are stocked, they are sold to the buyers at the set price rate.

All imports are subject to import license, although approximately 50 percent of them (on the basis of private imports in 1958) are liberalized, and for these items licenses are granted freely on application. Import licenses are issued only to registered importers and government departments and according to import programs, of which there have been seven since 1958. The present import program is the seventh, which covers requirements for the last half of 1961 in sets up two classes to imports from countries with which Turkey does not have bilateral trade agreements: Commodities that are licensed freely and commodities for which global quotas are established. The global quotas are divided into quotas for importers and quotas for industrialists, the latter designed to enable industrialists to meet their requirements by importing directly. Licenses for commodities subject to global quotas are issued freely within the quotas, but no one importer may obtain a license for goods valued at more than 20 percent of the quota. There are also quotas for imports from individual countries under the bilateral trade agreements concluded by Turkey with those countries; for these quotas the limitation on any one importer's obtaining a license for more than 20 percent of the quota does not apply.

An advance deposit of 10 percent of the value of the import is required for all imports except those by state agencies and those under the industrialists' quotas. The deposit must be made at the time of applying for the import license and is refunded at the time the import is completed.

Tariff Duties

Tariff duties applicable to commercial imports of pertinent commodities are as follows:

| | | *Percent ad valorem* |
|---|---|---|
| 12.01 | Oilseeds and oleaginous fruit, whole or broken | 10 |
| 15.02 | Tallow [1/] | 40 |
| 15.07 | Fixed vegetable oils, fluid or solid, crude, refined or purified: | |
| | A. Castor oil | 11 or 50 |
| | B. Olive oil | 50 |
| | C. Nonedible fixed vegetable oils, used in industry | 25 |
| | Other | 75 |
| 23.04 | Oilcake and other residues (except drugs) resulting from the extraction of vegetable oils | 15 |
| 12.02 | Flours or meals of oilseed or oleaginous fruit nonfatted excluding mustard flour | 25 |

[1/] Some soap manufacturers have attempted to import tallow freely but have been unable to obtain the release of the foreign exchange required.

According to Turkish Customs Law No. 6969, imports of vegetable oils from the United States under Title I of P. L. 480 through E.B.K. are exempt from taxes of any kind.

There are no commercial imports of oilcake, oilseeds, or animal fats.

## MARKET DEVELOPMENT OUTLOOK AND CONCLUSIONS

The market for U. S. edible oils in Turkey is currently being expanded, and this expansion is expected to continue. Many circumstances are contributing to these developments. U. S. oil is needed to supplement domestic production. U. S. soybean oil is gaining an increasing share of the local shortening and margarine market, owing particularly to its lower cost. The market for shortening and margarine is expected to increase at a rate of 10 percent annually, reflecting continued expansion in the population, increased per capita income, and--in the case of margarine--more extensive use of refrigeration facilities. The acceptance of brand names has played an important part in expanding the market for these products.

With the decline in sunflowerseed oil output, a need for an alternative blending oil is developing. U. S. soybean oil of salad-oil quality meets the requirements of such a product. As liquid salad oils are marketed in small containers for household consumption (now being introduced), the market for U. S. soybean oil will be increased.

The United States is the major foreign supplier of fat for the Turkish soap industry. As less expensive imported, inedible beef tallow again becomes widely used in soap manufacture the cost of soap production is expected to decrease and the market to broaden. This expanded market will provide an additional need for imported U.S. tallow.

Within the short run, 1962-65, it is unlikely that Turkey will be a market for U.S. oilseeds or oilcake. The present protein deficit in the livestock economy, which appears to be expanding with the continuing decline in sunflowerseed production and increased feeding requirements, could be met in part by imports of soybean meal or wider use of domestic cottonseed cake. However, without an improvement in the foreign exchange position of Turkey or a change in the availability of soybean meal for export under U.S. Government programing, soybean meal imports cannot be anticipated in the near future. As internal transportation facilities are improved, with resulting lower costs, and farm credit is made more flexible and more readily available, increased utilization of domestic cottonseed cake for cattle feeding can be expected.

# APPENDIX

*Selected Producers and Refiners of Vegetable Oils, Shortening, and Margarine*

Key:

* Potential or actual consumers of U.S. PBSY cottonseed oil

** Potential or actual consumers of U.S. Refined soybean oil

*** Potential or actual consumers of U.S. Fully Refined, deodorized soybean oil

P = Pressing of oilseeds

R = Refining of oil

E = Solvent extraction of oilseeds

H = Hydrogenation

| Location | | Name and Address | Activity |
|---|---|---|---|
| Adana | | 1. Paksoy Limited Ortakliği<br>Postahane Sokak No. 19. | P, R |
| | | 2. Türk Nebati Yağlari Fabrikasi A. Ş.<br>Döşeme Mahallesi | P |
| | (*) (**) | 3. Toroslar Ticaret T.A.O.<br>Döşeme Mahallesi No. 4 | P, R, H |
| Ceyhan | (*) (**) | 1. Ceyhan Sanayi ve Ticaret, İsletmeleri A.S. | P, R, H |
| İskenderun | | 1. Hatay Yağlari T.A.Ş.<br>5 Temmuz Caddesi | P, R |
| | | 2. DAÇ Ticaret ve Sanayi İşletmeleri Ltd. Şti.<br>Yeni İskele Karşisi | P, R |
| İstanbul | | | |
| | (**) (***) | 1. Berrak Yağ Fabrikasi Ltd. Şti.<br>Mürsel Paşa Cad. 110, Balat | R |
| | (**) (***) | 2. Hasan Beziray<br>Mumhane Caddesi 180, Tophane | R |
| | (**) (***) | 3. Harun Gürel<br>Mustafa Kemal Paşa Cad. 15/4<br>Yenikapi | R |
| | | 4. Yakup Gürel<br>Kirklareli | P |
| | (**) (***) | 5. Recep Halit Kademoglu ve Ogullari Kol. Şti.<br>Yağ İskelesi, Yogurtcu<br>Huseyin Sokak 10 | R |
| | (**) (***) | 6. Halim Salih Göroglu<br>Adapazari | R |
| | | 7. Ali Kemal Kavrakoglu<br>Asmaalti, Rüstempaşa, Böyük Çukur Han 16/1 | P, R |
| | (**) (***) | 8. Kirlangic Sanayi Ticaret ve Nakliyat A.Ş,<br>Kantarci Nazmi Sokak 11, Yağ<br>İskelesi | R |

| Location | | Name and Address | Activity |
|---|---|---|---|
| İstanbul (continued) | | | |
| | | 9. Nihat Ogullari Sanayi Kol. Şti.<br>Mürsel Paşa 122, Balat | P, R |
| | | 10. Hasan Özdoyuran<br>Tekirdağ | P, R |
| | | 11. Özyağ Nebati Fabrikasi<br>Piri Paşa Mah., Şerif Sokak 15<br>Silivri | P, R |
| | | 12. Hayrettin Süleymangil ve Ort. Kom. Şti.<br>Vaniköy Cad. 20-22, Vaniköy | P, R |
| | (*) (**) | 13. Trakya Sanayi ve Ticaret A. Ş.<br>Kürekciler Sokak, Topuz Han<br>Galata | P, R, H |
| | (*) (**) | 14. Unilever-Iş Ticaret ve Sanayi Türk Ltd. Sti.<br>Cümhuriyet Cad. 16, Kahan Apt.,<br>Harbiye | P, R, H |
| | | 15. Yağ Iş Ltd. Ort.<br>Bahariye Cad., Aralik Sokak 8/10<br>Eyup | P, R |
| İzmir | | | |
| | | 1. A. Lafont ve Mahdumlari<br>Halit Ziya Bulvari No. 42 | P, R |
| | | 2. Birleşik Sanayi ve Ticaret A. Ş.<br>Ali Paşa Meydani No. 70-72 | P, R |
| | | 3. İzmir Tarim Satis Kooperatifleri Yağ Kombinasi A.Ş.<br>Kürüçay 1542 Sokak | P, R, H |
| | | 4. Kapioglu Kollektif Ortakligi, Ahmet Unsal ve Ogullari<br>853 Sokak No. 25 | P, R |
| | | 5. M. ve J. Taranto ve Kumpanyasi Kollektif Şti.,<br>Guiseppe Hazan ve Jozef Eskinazi<br>Fevzipaşa Bulvari No. 15/17 | P, R |
| | | 6. Mişel Mikalef ve Şerikleri Kollektif Şti.<br>1334 Sokak No. 6 | P, R |
| | | 7. B. A. Gomel Şürekasi<br>Nebati Yağlar Fab.<br>Gazi Bulv. No. 41C | P, R |
| | | 8. Ticaret ve Sanayi Kontuvari T.A.Ş.<br>1334 Sodak No. 8 Peştemalcilar | R |
| | (*) (**) | 9. Turyağ Türkiye Yağ ve Mamûlâti A.Ş.<br>1595 Sokak No. 84, Mememen Cad. | P, R, E, H |
| | | 10. Muharrem Canobolat<br>Sabun Fab.<br>874 Sokak No. 11 | R |
| | | 11. Yahya Kerim Onart<br>Yildiz Yağ Fab.<br>1561 Sokak No. 7 | P, R |

| Location | Name and Address | Activity |
|---|---|---|
| Mersin | | |
| | 1. Çukobirlik Nebati Yağ ve Sabun Fabrikasi<br>Tarsus Caddesi | P, R |
| | 2. İşel Prina Yağ Fabrikasi-Kadri Sabuncu,<br>Mustafa Sabuncu ve Esat Alkan Kol. Şti.<br>Tarsus Caddesi | P |

Note: Plants specializing in olive oil refining have, where determined, been omitted. Only extraction facilities currently operating on vegetable oilseeds or cake are included. Selected refiners are also blenders of seed oils for use as a liquid salad and cooking oil medium.

*Associations*

| Location | Name and Address | Activity |
|---|---|---|
| Ankara | 1. Et ve Balik Kurumu<br>Umum Müdürlük, Ak Köprü | Government organization for the importation and distribution of vegetable oils and animal fats. |
| | 2. Türkiye Ticaret Odalari,<br>Sanayi Odalari ve Ticaret<br>Borsalari Birligi<br>Posta Caddesi No. 76 | Union of Chambers of Commerce, Chambers of Industry and Commercial Exchanges of Turkey. |
| | 3. Vasfi Hakman<br>Director for Turkey<br>Soybean Council of America, Inc.<br>Gazi Mustafa Kemal Bulvari<br>Avrupa Han, Daire 6, Yenişehir<br>(Tel. 12 71 62) | |
| Rome, Italy | Dr. Fred R. Marti, Director for<br>International Operations<br>Soybean Council of America, Inc.<br>Via Parigi 11<br>Cable Address<br>Amsoy – Rome<br>(Tel. 478.951) | |
| Waterloo, Iowa | Howard L. Roach, President<br>Soybean Council of America, Inc.<br>405-9 Marsh Place Building<br>(Tel. 234-1566) | |

The U. S. Embassy is located in Ankara; U. S. Consulates General are located in İzmir and İstanbul, and a U. S. Consulate is in Adana.



☆ U.S. GOVERNMENT PRINTING OFFICE : 1962 O - 632621